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**** WARNING ** WARNING ** WARNING ** WARNING ****
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August 10, 2005

04-SM-1-58.7/61.8
04-1123G4
ER-1187(009)E

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN MATEO COUNTY IN MONTARA AT ROUTE 1 FROM 2ND STREET TO 2.1 KM NORTH OF 2ND STREET.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on August 16, 2005.

This addendum is being issued to revise the Notice to Contractors and Special Provisions, and provide a copy of the supplement to the Information Handout.

In the Special Provisions, "IMPORTANT SPECIAL NOTICES," the second and third paragraphs are revised as follows:

"Attention is directed to the Information Handout regarding the Conceptual Stormwater Pollution Prevention Plan (SWPPP), and habitat mitigation and success criteria for permit compliance. Bidders should read the material provided to become familiar with the intent and goals of this wetland creation and mitigation contract.

Attention is directed to "Plant Establishment Work," of the Special Provisions regarding the 3 year plant establishment period."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," is revised as attached.

In the Special Provisions, Section 5-1.13, "PAYMENTS," the fifth paragraph is revised as follows:

"or the contract item of Plant Establishment the Department of Transportation has determined that the amount of **\$200,000** shall be considered to be the value of the contract item for the purpose of calculating contract retention pursuant to Public Contract Code section 10261."

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In the Special Provisions, Section 5-1.14, "PROJECT INFORMATION," the following item is added to the second paragraph:

"J. Conceptual Storm Water Pollution Prevention Plan (SWPPP)"

In the Special Provisions, Section 5-1.16, "RELATIONS WITH CALIFORNIA DEPARTMENT OF FISH AND GAME," the tenth paragraph is deleted.

In the Special Provisions, Section 5-1.19, "BIOLOGICAL MONITORING/ COMPLIANCE WITH SPECIES REGULATIONS," is added as attached.

In the Special Provisions, Section 10-1.02, "WATER POLLUTION CONTROL," in the subsection, "STORM WATER POLLUTION PREVENTION PLAN PREPARATION, APPROVAL AND AMENDMENTS," the eleventh paragraph is revised as follows:

"Within 5 working days after the approval of the contract, the Contractor shall submit 3 copies of the draft SWPPP to the Engineer. The Engineer will have 3 working days to review the SWPPP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within 5 working days of receipt of the Engineer's comments. The Engineer will have 3 working days to review the revisions. Upon the Engineer's approval of the SWPPP, 4 approved copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

In the Special Provisions, Section 10-1.05, "TEMPORARY CONSTRUCTION ENTRANCE," the third paragraph is revised as follows:

"Due to an existing drainage swale and change in grade from the existing roadway into the work area, a bridge shall be installed to span over the swale. No fill material shall be allowed in the swale. Within 5 working days after the approval of the contract, the Contractor shall submit 3 copies of the draft bridge plan to the Engineer. The Engineer will have 3 working days to review the bridge plans. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the bridge plans within 5 working days of receipt of the Engineer's comments. The Engineer will have 3 working days to review the revisions. Upon the Engineer's approval of the bridge plans 4 approved copies of the bridge plans, incorporating the required changes, shall be submitted to the Engineer. The plan shall conform to Section 5-1.02, 'Plans and Working Drawings' of the Standard Specifications and these special provisions. Minor grading may be allowed at the upper hinge point of the slope to provide a stable sill platform and conform to the roadway surface."

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In the Special Provisions, Section 10-1.08, "DAMAGE REPAIR," the third paragraph is revised as follows:

"Damage to slopes, plants, irrigation systems and other highway facilities occurring as a result of rain during the plant establishment period shall be repaired by the Contractor, when directed by the Engineer. The cost of the repairs which exceed the accumulated sum of \$10,000 will be borne equally by the State and the Contractor. The division of cost will be made by determining the cost of repairs in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications, and paying to the Contractor one-half of the cost which exceeds the sum of \$10,000."

In the Special Provisions, Section 10-1.14, "DUST CONTROL," the third paragraph is revised as follows:

"Within 5 working days after the approval of the contract, the Contractor shall submit 3 copies of the dust control plan to the Engineer. The Engineer will have 3 working days to review the dust control plan. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the dust control plan within 5 working days of receipt of the Engineer's comments. The Engineer will have 3 working days to review the revisions. Upon the Engineer's approval of the dust control plan, 4 approved copies of the dust control plan, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the dust control plan while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

In the Special Provisions, Section 10-1.18, "MAINTAINING TRAFFIC," is revised as attached.

In the Special Provisions, Section 10-2.04, "HIGHWAY PLANTING," the subsection, "PLANT ESTABLISHMENT WORK," is revised as attached.

In the Special Provisions, Section 10-2.05, "TEMPORARY IRRIGATION SYSTEMS," is revised as attached.

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To Proposal and Contract book holders:

Attached is a copy of the Conceptual Stormwater Pollution Prevention Plan (SWPPP) as a supplement to the Information Handout.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Sections 8-1.03, "Beginning of Work," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," and 20-4.08, "Plant Establishment Work," of the Standard Specifications and these special provisions.

The Contractor shall furnish the Engineer with a statement from the vendor that the order for the sign panels required for this contract has been received and accepted by the vendor; and the statement shall be furnished within 15 calendar days after the contract has been approved by the Attorney General, or the attorney appointed and authorized to represent the Department of Transportation. The statement shall give the dates that the sign panels will be shipped. If the Contractor has the necessary materials on hand, the Contractor will not be required to furnish the vendor's statement.

The 72 hours advance notice before beginning work specified in Section 8-1.03, "Beginning of Work," of the Standard Specifications is changed to 5 days advance notice for this project.

The Roadway Excavation work, including offhaul and delivery, shall be diligently prosecuted to completion before the expiration of **55 WORKING DAYS** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$ 1,700 per day, for each and every calendar day's delay in finishing the roadway excavation work in excess of **55 WORKING DAYS**.

The work (except plant establishment work) shall be diligently prosecuted to completion before the expiration of **315 WORKING DAYS** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$ 600 per day, for each and every calendar day's delay in finishing the work (except plant establishment work) in excess of **315 WORKING DAYS**.

The Contractor shall diligently prosecute all work (including plant establishment) to completion before the expiration of **1065 WORKING DAYS** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$600 per day, for each and every calendar day's delay in completing the work in excess of **1065 WORKING DAYS**.

In no case will liquidated damages of more than \$ 1,700 per day be assessed.

5-1.19 BIOLOGICAL MONITORING/ COMPLIANCE WITH SPECIES REGULATIONS

Attention is directed to "Permits and Licenses", "Environmentally Sensitive Areas", and "Order Of Work", of these special provisions

The Contractor shall ensure protection of wildlife and plant species of concern during construction. The State and Federal Endangered Species Acts protect listed plant and wildlife species, and also designate Species Of Concern. In addition, attention is directed to the federal Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), title 50 Code of Federal Regulations parts 10, 13 and 21, and California Department of Fish & Game Code Sections 3503, 3513, and 3800 protect migratory birds, their occupied nests and eggs from disturbance or destruction. A formal Memorandum of Understanding between the Department of Transportation and the Department of Fish & Game has been prepared in regard to project construction mitigation measures required for the San Francisco dusky-footed woodrat.

The Engineer will provide Biological Monitor(s) on this project that are required to monitor for the presence of listed plant and wildlife species, general wildlife, woodrat nests, and bird nests. Potential habitat for listed species, California red-legged frog (CRLF) and San Francisco garter snake (SFGS) is found immediately adjacent to the project site. Neither the CRLF nor SFGS has been found at the site. Since potential habitat for San Francisco garter snake (SFGS) exists in the project vicinity, the Biological Monitor shall include this species.

All Contractor employees working on the project, including subcontractors, shall attend a one-hour pre-construction employee education program presented by the Biological Monitor. Contractor field workers will not be permitted to start fieldwork on the project until they have attended a pre-construction employee education program. The Contractor shall notify the Engineer 5 days in advance of when Contractor employees are ready to attend the program. The employee education program will include descriptions of the California red-legged frog, woodrat nests, and bird nests, as well as include information regarding the duties of the Biological Monitor and compliance with California Department of Fish and Game and U.S. Fish and Wildlife requirements.

The Contractor shall notify the Engineer no less than 5 working days prior to starting any construction work. The Engineer shall then request a pre-construction biological monitoring survey by the Caltrans biologist. The Caltrans biologist shall make a visual survey of the project site to make sure that wildlife is not present on the site prior to the start of construction. The Contractor shall receive the Engineer's approval before beginning any work disturbing the ground or vegetation.

The Contractor shall provide the Engineer with a weekly and daily work schedule plan which explains the type of construction activities that will be taking place and where on the project site they will be taking place, so that the Engineer will be able to schedule the appropriate number of Biological Monitors in response to the construction work plan schedule. The work schedule plan shall also list (1) the number and type of construction vehicles that are planned to be utilized and (2) the locations of each vehicle utilization. The Contractor shall notify the Engineer of the scheduled work shifts a day before so that the Biological Monitor(s) may start their surveys one hour prior to the start of the work shift, and no construction work shall commence until after the Biological Monitor(s) has cleared each area for work.

Biological Monitors shall conduct monitoring prior to each construction work shift, during construction, and at the end of each work shift. The Contractor shall allow the Biological Monitor one hour prior to the initiation of each construction work shift to conduct monitoring to ensure that work areas are clear of listed species, general wildlife, bird nests, and woodrat nests. The monitoring will consist of a survey of the project site, including at a minimum the following activities: visual surveys of the entire area focusing on the immediate area where work is proposed for that shift; inspecting under rocks, wood, or other debris; inspecting under and in any construction equipment and stored materials; and "shaking" of any vegetation to flush wildlife. The first priority will be given to areas immediately adjacent to the suitable CRLF habitat and the second priority will be given to the potentially suitable habitat areas. Prior to the end of each work shift, the Biological Monitor will make a final visual survey of all fences and barriers to ensure the integrity of the fence lines so that wildlife will not be able to enter the construction area between work shifts. If any fence or barrier is found not to be in good condition, the Contractor shall take immediate corrective action.

Biological monitoring on the project site by Caltrans biologists will result in the following assessment protocol. If the Caltrans biologists determine that no wildlife are present within the project site, then scheduled work can proceed as planned. If wildlife are encountered within the project site, then Caltrans biologists will make a field determination regarding whether or not the construction activities would adversely affect the wildlife, and if the Caltrans biologists determine that the construction activity will not adversely affect the wildlife, then scheduled work can proceed as planned. On the other hand, if the construction activity is determined to potentially have an adverse effect on wildlife, then the Caltrans biologists will inform the Engineer that all work which could impact wildlife shall be halted in the immediate area until either (1) for common wildlife, until the Biological Monitor relocates wildlife off of the project site, (2) for a Species Of Concern such as a woodrat, or woodrat nests, until the Biological Monitor relocates the Species Of Concern outside the construction zone in accordance with the Scientific Collection Permit and/or the Memorandum Of Understanding with the California Department of Fish & Game, and (3) for listed species, until a Permitted Biologist relocates the listed species off of the project site. Only permitted biologists are allowed to handle listed species. Any disturbance or the harming of listed species as a result of construction work will result in disciplinary actions pursuant to the Federal Endangered Species Act and the California Endangered Species Act. The Contractor shall receive the Engineer's approval before beginning any work again within that immediate area

If a California red-legged frog, San Francisco garter snake, or other wildlife is encountered by Contractor or Engineer then construction activities in the surrounding area shall be immediately halted. The Engineer and Biological Monitor shall be immediately notified, and construction activities may resume only after the Engineer and Biological Monitor grants clearance of the area.

Full compensation for any delays or stoppage of work to the Contractor's operations resulting from compliance with Biological Monitoring activities up to 20 hours, regardless of the number of occurrences, including inefficiencies and loss of productivity, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.18 MAINTAINING TRAFFIC

Attention is directed to Sections 7-1.08, "Public Convenience," 7-1.09, "Public Safety," and 12, "Construction Area Traffic Control Devices," of the Standard Specifications and to the provisions in "Public Safety" of these special provisions and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7-1.09.

Delivery and hauling of materials, whether to or within the project limits utilizing Route 1 shall be only during the hours shown on Chart No. 1, "Delivery and Hauling of Material Requirements," included in this section "Maintaining Traffic." Materials are associated with the following contract items of work: traffic handling (temporary railing (Type K) and temporary crash cushion module), roadway excavation, temporary water pollution control, erosion control, and planting.

No work that would require a lane closure shall be performed.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way, or along the shoulder within the project limits, at the Gray Whale Cove Public Parking Area, or the Montara State Beach Public area including any section closed to public traffic.

Whenever vehicles or equipment are parked on the shoulder within 1.8 m of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 7.5 m intervals to a point not less than 7.5 m past the last vehicle or piece of equipment. A minimum of 9 cones or portable delineators shall be used for the taper. A C23 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted on a portable sign stand with flags. The sign shall be placed where designated by the Engineer.

Minor deviations from the requirements of this section concerning hours of work which do not significantly change the cost of the work may be permitted upon the written request of the Contractor if, in the opinion of the Engineer, public traffic will be better served and the work expedited. These deviations shall not be adopted by the Contractor until the Engineer has approved the deviations in writing. Other modifications will be made by contract change order.

Chart No. 1																									
Delivery and Hauling of Material Requirements																									
Location: Northbound & Southbound Route 1 within project limits																									
FROM HOUR TO HOUR	a.m.											p.m.													
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Mondays through Thursdays	X	X	X	X	X	X	X				X	X	X	X	X	X				X	X	X	X	X	X
Fridays	X	X	X	X	X	X	X				X	X	X	X	X	X							X	X	X
Saturdays	X	X	X	X	X	X	X	X	X														X	X	X
Sundays	X	X	X	X	X	X	X	X	X														X	X	X
Day before designated legal holiday	X	X	X	X	X	X	X	X	X														X	X	X
Designated legal holidays																									

Legend:

☒ Delivery and hauling of materials allowed

☐ No delivery and hauling of materials allowed

REMARKS:

Chart No. 2																									
Two-Lane Conventional Highway Lane Requirements																									
Location:																									
FROM HOUR TO HOUR	a.m.											p.m.													
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	
Mondays through Thursdays	R	R	R	R	R	R	R														R	R	R	R	R
Fridays	R	R	R	R	R	R	R																R	R	R
Saturdays	R	R	R	R	R	R																			
Sundays																									
Day before designated legal holiday	R	R	R	R	R	R	R														R	R	R	R	R
Designated legal holidays																									

Legend:

☒ One-way traffic control permitted:

1. Close one traffic lane and stop traffic for periods not to exceed five minutes.
2. Provide at least one traffic lane.
3. Maximum length one-way control shall be 970 feet (300 meters)

☐ No work that interferes with public traffic will be allowed

REMARKS:

PLANT ESTABLISHMENT WORK

The plant establishment period shall be Type 1 and shall be 750 working days.

Within areas shown as "Roadside Clearing Limits" on the plans, the Contractor shall perform the following Plant Establishment work:

- A. Provide photo documentation of the project site as specified herein.
- B. Remove trash and debris twice a month
- C. Kill weeds as specified herein once a month.
- D. Kill, remove, and dispose of reemerging exotic plant species as specified herein once a month.
- E. Provide replacement planting as specified herein once a month.
- F. Rodents and animals shall be controlled

The Contractor shall be present during Plant Establishment phase progress inspections as specified in "Highway Planting and Irrigation Systems: General" of these special provisions. In addition to the credited and non-credited working day provisions contained in Standard Specification Section 20-4.08 "Plant Establishment Work," working day credits will be subject to the following: If the Contractor fails to attend any scheduled progress inspection, working days will not be credited for the date of the planned progress inspection, and non-credited working days will continue until the progress inspection is rescheduled by the Contractor and completed with the Contractor and Engineer present.

Once started, work to correct deficiencies shall be performed continuously until full completion. Completion of deficiencies shall be noted in the associated progress inspection report and the work verified in the field by the Engineer.

Photo Documentation

The Contractor shall provide photo documentation of the project site during the plant establishment period. Photo documentation shall consist of color photographs taken at 24 fixed points. Photo locations and orientation shall be determined by the Engineer and adequately represent the site conditions over time. Photos shall be recorded using a digital camera using JPEG (jpg.) format. The Contractor shall provide to the Engineer with the following within 25 days of each site photo session:

1. Two sets of actual color photos, minimum size to be 100 millimeters by 150 millimeters. Each photo set shall be in a binder with a photo proof sheet, and each photograph shall be in an archival sleeve. Each photograph shall be labeled with the following information: date photo taken, time, location, and description.
2. An electronic copy of the photos, Disc or CD using JPEG format. Each JPEG file shall have a minimum pixel resolution of 3008 x 2000.

Photo documentation and counts of existing plants by species shall be done five times during the contract at the following times:

1. 30 days after completion of planting Plant (Group M).
2. 30 days after completion of planting Plant (Group P).
3. After 250 and 500 days of plant establishment have been completed.
4. Within 30 days of the acceptance of the contract.

Maintain Basins

Plant basins shall be kept in good repair, including silt removal, and shall be repaired as often as necessary to provide sufficient containment of water for healthy plant growth. If plants were mulched prior to basin damage, basin repair shall include replacing the mulch.

Replacement mulch shall be wood chips.

Plant basins shall be temporarily modified during the wet season to prevent plant and basin damage due to excessive saturation by ponded water.

Replacement Plants The State will furnish a quantity of 2000 plants to be used as replacement plants. These replacement plants are comprised of the following:

Plant Group	Species Name	Common Name	QTY	Replacement cost per plant 2007
L	<i>Carex harfordii</i>	Harford Sedge	240	\$0.94
L	<i>Carex obnupta</i>	Slough Sedge	480	\$0.94
L	<i>Carex Praegracilis</i>	Blackcreeper Sedge	400	\$0.94
L	<i>Juncus patens</i>	Juncus patens	160	\$0.94
L	<i>Oenanthse sarmentosa</i>	Pacific Oenanthse	80	\$0.94
L	<i>Scirpus microcaarpus</i>	Panicled Bulrush	240	\$0.94
M	<i>Baccharis pilularis</i>	Coyote Bush	10	\$2.04
M	<i>Eriophyllum staechadifolium</i>	Seaside Woolly Sunflower	10	\$2.04
M	<i>Heracleum lanatum</i>	Cow Parsnip	50	\$2.04
M	<i>Holodiscus discolor</i>	Ocean Spray	50	\$2.04
M	<i>Lonicera involucrate var. ledebourii</i>	Twinberry	100	\$2.04
M	<i>Ribes sanguineum</i>	Redflowered Current	10	\$2.04
M	<i>Rubus parviflorus</i>	Western Tumbleberry	40	\$2.04
M	<i>Rubus urinus</i>	California Blackberry	110	\$2.04
M	<i>Sambucus racemosa</i>	Red Elderberry	20	\$3.85
TOTAL			2000	

The Contractor shall be responsible for scheduling and pickup of the State furnished replacement plants from Go Native Nursery, P.O. Box 370103 Montara, CA 94037 Tel (650) 728-2286, Email: dave@gonativenursery.com.

Contractor shall be responsible for making all arrangements and pay all costs associated with replacement plants required beyond the 2000 State-furnished replacement plants.

The replacement plants shall be obtained from:

Go Native Nursery,
P.O. Box 370103 Montara, CA 94037
Tel (650) 728-2286.
Contact: David Sands

Go Native Nursery has agreed to furnish replacement plants for years 2007-2011 at the guaranteed price as shown above. The total price will be increased 5 percent for each year that orders are placed after June 1, 2007 until the end of the contract.

The guaranteed price includes seed collection for each year, growing plants to contract-specified sizes, certification of plants, and temporary storage.

The grower shall limit the period that replacement plants will be held in storage to 12 months from their availability, at which time, the Contractor shall take possession of the plants and responsibility for storage of the plants until they are used for replacement. The estimated duration for growing plants from initial collection is 400 calendar days.

The guaranteed price does not include delivery or applicable sales taxes.

The Contractor is completely responsible for coordinating orders for replacement plants with Go Native Nursery following June of 2007.

At the option of the Contractor, plants of a larger container size than those originally specified may be used for replacement plants.

Alternative contract species from the Replacement Plants chart may be allowed to replace dead plant species if approved in advance by the Engineer.

Plant Establishment work is subject to the following provisions. The State will provide 2000 State-furnished replacement plants. The State will make these plants available to the Contractor at the beginning of the Plant Establishment period.

A portion of the 2000 replacement plants made available to the Contractor will be subject to a contract deduction. From 100 to 250 working days following the beginning of the Plant Establishment period, a contract deduction of \$7.00 will be taken for each replacement plant used by the Contractor. Any remaining State Furnished replacement plants unused following 250 days of the Plant Establishment period shall become the property of the Contractor.

All replacement plants for the period from 251 working days or unless the State furnished replacement plants have been exhausted, which ever occurs first, up to the completion of the Plant Establishment period will be the responsibility of the Contractor. Replacement plants shall be derived from the same sources as previous State Furnished replacement plants and shall be grown in accordance with the same provisions as outlined in the information handout for this project.

Replacement of dead plants shall be in accordance with section 20-4.07, 'Replacement' of the Standard Specifications except that the Contractor shall begin replacement of dead plants within 3 working days following indication by the Engineer to replace dead plants that have been marked in the field. Marking of the dead plants shall occur during scheduled progress inspections as provided for elsewhere in these special provisions.

The lump sum price paid for plant establishment work shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved with plant establishment, complete in-place, including pickup/delivery of all plants, photo documentation, furnishing and placement of all replacement planting beyond these provided by the State, as shown on the plans, as specified in the Standard Specifications, and these special provisions, and as directed by the Engineer.

Exotic Species Control and Weed Control

Existing vegetation outside of the areas to be killed or controlled shall be protected from injury or damage resulting from the Contractor's operations. The Contractor shall kill and remove reemerging exotic plant species as specified under roadside clearing of these special provisions. Exotic plant species shall be disposed of outside the highway right of way in accordance with the requirements in Section 7-1.13 of the Standard Specifications.

If seed heads are present, seed heads shall be bagged in plastic, tightly secured and the stalks cut below the bagged portion of the plant. Mechanical removal is allowed for remaining portions of the plant after the seed heads are removed. Care shall be taken to thoroughly remove all clippings and seed heads.

Removed seed heads shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Broadcast spraying of pesticides for the control of exotic species and weeds is not permitted. The use of any and all pesticides, including the method of application shall be reviewed and approved by the Engineer prior to each application. Methods of application shall be limited to spot spraying, brushing or wick applications as approved by the Engineer based on the location of weeds and exotic species and their proximity to native plants.

Weeds and Erosion Control (Type D) within plant basins, including basin walls, shall be controlled by hand pulling before the weeds reach the seed stage of growth or exceed 150 mm in length after the plants have been planted.

Weeds outside of plant basins shall be controlled by hand pulling, or by applying pesticides as approved by the Engineer.

When ordered by the Engineer, weeds outside of plant basins shall be controlled by mowing. Weeds shall be mowed at the height and times as directed by the Engineer. This work will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

Final Inspection

The final inspection shall be performed in conformance with the provisions in Section 5-1.13, "Final Inspection," of the Standard Specifications and shall be completed a minimum of 20 working days before the estimated completion of the contract.

10-2.05 TEMPORARY IRRIGATION SYSTEMS

Temporary irrigation systems shall be furnished and installed in conformance with the provisions in Section 20-5, "Irrigation Systems," of the Standard Specifications, except materials containing asbestos fibers, beryllium or beryllium alloys shall not be used.

Temporary irrigation system work shall consist of furnishing and installing a temporary irrigation system of the Contractor's design, furnishing a water supply and water supply system and providing electrical service. Truck watering shall not be permitted. Attention is directed to Section 20-4.06, "WATERING" of the Standard Specifications regarding the Contractor's responsibility to furnish and apply water as required to keep plants in a healthy, growing condition during the life of the contract.

Materials for the temporary irrigation system shall be of commercial quality. The contractor will be required to design and construct the temporary irrigation system in such a way that allows for the watering of different plant zones independently from one another.

Within 10 working days after the approval of the contract, the Contractor shall submit 3 copies of the draft temporary irrigation plan to the Engineer. The plan shall include schematic diagrams of all of the components noted in the Temporary Irrigation System cost breakdown and shall clearly show how each component shall be installed in relation to one another. The Engineer will have 5 working days to review the plans. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the plans within 5 working days of receipt of the Engineer's comments. The Engineer will have 3 working days to review the revisions. Upon the Engineer's approval of the plans, 4 approved copies of the plans, incorporating the required changes, shall be submitted to the Engineer. The Temporary Irrigation Plans shall conform to the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions.

Method A pressure testing shall conform to the provisions in Section 20-5.03H(1), "Method A", of the Standard Specifications, except leaks that develop in the tested portion of the system shall be located and repaired after each test period when a drop of more than 35 kPa is indicated by the pressure gage. After the leaks have been repaired, the one hour pressure test shall be repeated and additional repairs made until the drop in pressure is 35 kPa or less.

Pipe supply lines shall be pressure tested in conformance with the provisions in Section 20-5.03H, "Pressure Testing," of the Standard Specifications, except the pipe (supply line) on the discharge side of the control valve shall be tested by Method B as specified in Section 20-5.03H(2), "Method B," of the Standard Specifications.

Water for temporary irrigation systems shall be stored on the site in above ground storage tanks. The storage tanks shall be installed on a concrete pad and located as shown on the plans and in conformance with the following:

- A. The water storage tank(s) shall be an above ground, horizontal tank with an elliptical cross-section, ultraviolet stabilized, cross link polyethylene tank conforming to the requirements of ASTM Designation: D1998. Water storage tank(s) shall include lockable roof man way, screened gooseneck tank vent, and 2 stainless steel female threaded tank connections. Tank connections shall be stubbed out from near the bottom of the tank and shall include an internal drop tube to within 50mm of the tank bottom. The tank(s) shall have seismic anchors. The tank submittal shall include engineering calculations supporting the number and size of anchors.
- B. The Contractor shall be responsible for adequately sizing the storage tank(s) to allow for sufficient capacity to adequately operate the temporary irrigation system.

Full compensation for designing, providing and installing the temporary irrigation system, including storage tanks, concrete pad, irrigation equipment enclosure, booster pump system, irrigation controller and irrigation enclosure cabinet, and all other above ground temporary irrigation facilities shall be considered as included in the contract price paid for temporary irrigation system and no separate payment will be made therefor.

VALVE BOXES

The temporary irrigation system shall include valve boxes. Valve boxes shall conform to the provisions in Section 20-2.24, "Valve Boxes," of the Standard Specifications, except as otherwise provided herein.

Valve boxes shall be precast portland cement concrete, fiberglass or reinforced plastic. Covers for concrete valve boxes shall be glass fiber reinforced plastic, plastic, concrete, cast iron or steel. Cast iron and steel covers shall be hinged with brass hinge pins for valve boxes containing valves smaller than 50 mm.

Covers for plastic valve boxes shall be glass fiber reinforced plastic or plastic.

Valve boxes shall be identified on the top surface of the covers by labels containing the appropriate abbreviation for the irrigation facility contained in the valve box as shown on the plans. Valve boxes that contain remote control valves shall be identified by the appropriate letters and numbers (controller and station numbers). Labels for valve boxes shall conform to the provisions in Section 20-5.03F, "Valves and Valve Boxes," of the Standard Specifications.

The tops of valve boxes shall be installed 200mm above finished grade.

ELECRIC AUTOMATIC IRRIGATION COMPONENTS

The temporary irrigation system shall include Electric automatic irrigation components that conform to the provisions in Section 20-2.31, "Electrical Equipment and Materials," of the Standard Specifications and these special provisions.

Irrigation Controllers

Irrigation controllers shall be single, solid-state independent controllers conforming to the following:

- A. Irrigation controllers shall be fully automatic and shall operate a complete 14-day or longer irrigation program.
- B. A switch or switches shall be provided on the face of the control panel that will turn the irrigation controller "on" or "off" and provide for automatic or manual operation. Manual operation shall allow cycle start at the desired station and shall allow activation of a single station.
- C. The watering time of each station shall be displayed on the face of the control panel.
- D. The irrigation controller and the low voltage output source shall be protected by fuses or circuit breakers.
- E. The irrigation controller mechanism, panel and circuit board shall be connected to the low voltage control and neutral conductors by means of plug and receptacle connectors located in the irrigation controller enclosure.
- F. Each station shall have a variable or incremental timing adjustment with a range of 99 minutes to a minimum of one minute.
- G. Irrigation controllers shall be capable of a minimum of 2 program schedules.
- H. Irrigation controllers shall have an output that can energize a pump start circuit or a remote control valve (master).
- I. Irrigation controllers shall be manufactured by the same company.
- J. Where direct burial conductors are to be connected to the terminals strip, the conductors shall be connected with the proper size open-end crimp-on wire terminals. No exposed wire shall extend beyond the crimp of the terminal and the wires shall be parallel on the terminal strip.

Attention is directed to the provisions in "Electric Service (Irrigation)" of these special provisions regarding electrical power for irrigation controllers and irrigation controller enclosure cabinets.

Electric Remote Control Valves

Electric remote control valves shall conform to the provisions in Section 20-2.23, "Control Valves," of the Standard Specifications and the following:

- A. Valves shall be glass filled nylon, brass, bronze, or cast iron construction.
- B. Valves shall be angle pattern (bottom inlet) or straight pattern (side inlet) as shown on the plans.

Pull Boxes

Pull box installations shall conform to the provisions in Section 20-5.027I, "Conductors, Electrical Conduits and Pull Boxes," of the Standard Specifications.

Conductors

Low voltage, as used in this section "Conductors," shall mean 36 V or less.

Low voltage control and neutral conductors shall be installed in conduit between irrigation controller, booster pumps, and electric remote control valves.

Low voltage control and neutral conductors in pull boxes and valve boxes, at irrigation controller terminals, and at splices shall be marked as follows:

- A. Conductor terminations and splices shall be marked with adhesive backed paper markers or adhesive cloth wrap-around markers, with clear, heat-shrinkable sleeves sealed over the markers.
- B. Non-spliced conductors in pull boxes and valve boxes shall be marked with clip-on, "C" shaped, white extruded polyvinyl chloride sleeves. Marker sleeves shall have black, indented legends of uniform depth with transparent overlays over the legends and "chevron" cuts for alignment of 2 or more sleeves.

Markers for the control conductors shall be identified with the appropriate number or letter designations of irrigation controllers and station numbers. Markers for neutral conductors shall be identified with the appropriate number or letter designations of the irrigation controllers.

The color of low voltage neutral and control conductor insulation, except for the striped portions, shall be homogeneous throughout the entire thickness of the insulation.

Insulation for conductors may be UL listed polyethylene conforming to UL44 test standards with a minimum insulation thickness of 1.05 mm for wire sizes 10AWG and smaller.

IRRIGATION CONTROLLER ENCLOSURE CABINET

The electrical system for the temporary irrigation system shall include an Irrigation controller enclosure cabinet. The cabinet shall be constructed and equipment installed in the cabinets in conformance with the provisions of Section 86-3.04A, "Cabinet Construction," of the Standard Specifications, and as defined by code and these special provisions.

Electric service shall be installed in accordance with "Electric Service (Irrigation)" of these special provisions.

Irrigation controller enclosure cabinet shall be a minimum of 1.2 high.

Irrigation controller enclosure cabinets shall be fabricated in conformance with the provisions in Section 86-3.04A, "Cabinet Construction," of the Standard Specifications.

Irrigation controller enclosure cabinets shall be fabricated of cold rolled steel, stainless steel or aluminum.

Irrigation controller enclosure cabinet doors shall not be furnished with integral door locks. Irrigation controller enclosure cabinet door handles shall have provisions for padlocking in the latched position.

Mounting panels shall be fabricated of 19 mm exterior AC grade veneer plywood. The panels shall be painted with one application of an exterior, latex based, wood primer and two applications of an exterior, vinyl acrylic enamel, white in color. The panels shall be painted on all sides and edges before installation of the panels in the cabinets and the equipment on the panels.

Inside of the doors shall have provisions for storage of the irrigation plans.

IRRIGATION SYSTEMS FUNCTIONAL TEST

The temporary irrigation system shall include functional tests for the irrigation controllers and associated automatic irrigation systems which shall conform to the provisions in Section 20-5.027J, "Testing," of the Standard Specifications and these special provisions.

Tests shall demonstrate to the Engineer, through one complete cycle of the irrigation controllers in the automatic mode, that the associated automatic components of the irrigation systems operate properly. If automatic components of the irrigation systems fail a functional test, these components shall be repaired at the Contractor's expense and the testing repeated until satisfactory operation is obtained.

Associated automatic components shall include, but not be limited to, booster pump systems, remote control valves.

Upon completion of work on an irrigation system, including correction of deficiencies and satisfactory functional tests for the systems involved, the plants to be planted in the area watered by the irrigation system may be planted provided the planting areas have been prepared as specified in these special provisions.

PIPE

The irrigation system shall include Plastic pipe (supply line). Plastic pipe (supply line) shall conform to Section 20-2.15B, 'Plastic Pipe' of the Standard Specifications and these special provisions.

Plastic Pipe

Plastic pipe supply lines shall be polyvinyl chloride (PVC) 1120 or 1220 pressure rated pipe.

Plastic pipe supply lines and fittings that are 100 mm or larger in diameter on the supply side of control valves may be the rubber ring gasket type, except when pressure rating (PR) 315 plastic pipe supply line is required.

Plastic pipe supply lines less than 100 mm in diameter shall have solvent cemented type joints. Primers shall be used on the solvent cemented type joints.

Plastic pipe (irrigation lines) shall be installed on the finished grade.

Fittings for plastic pipe supply lines with a pressure rating (PR) of 315 shall be Schedule 80.

SPRINKLERS

Sprinklers shall conform to the type, pattern, material, and operating characteristics as shown on the plans submitted by the Contractor and approved by the Engineer. Flexible risers shall be ultraviolet (UV) resistant, and brown in color. Flow shutoff device on risers shall automatically and instantly stop the flow of water from a riser when the riser is broken on the downstream side of the device. The flow shutoff device shall be installed as recommended by the manufacturer of the device.

BOOSTER PUMP

The temporary irrigation system shall include a Booster pump system. The Booster pump system shall be installed in conformance with these special provisions.

The booster pump shall be operated by electricity only. No fuel driven booster pumps shall be allowed.

A booster pump system shall consist of a pump, motor, pump enclosure, foundation, pipe, fittings, and appurtenances necessary for the satisfactory operation of the booster pump. Incidental material or equipment not mentioned in these special provisions, which may be necessary for completion and satisfactory operation of the booster pump system, shall be furnished and installed.

MATERIALS LIST AND DRAWINGS

In conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, the Contractor shall submit, within 10 days after approval of the contract, a list of materials which the Contractor proposes to install for the booster pump systems together with the drawings and other data as specified below:

- A. There shall be a working drawing for the pump system showing the pump details, piping, and equipment as planned to be installed and for other materials to be fabricated for the installation.
- B. The data submitted shall be labeled with a descriptive title, project description and contract number of the project.

At least 4 copies of the data shall be initially submitted to the Engineer for approval. The Engineer will review the submitted data and will return to the Contractor either one set for correction or 2 sets that have been approved.

The State shall not be liable for materials purchased or labor performed, prior to approval of the drawings and materials list, and will not be responsible for any delay to the Contractor pending review of the drawings and information submitted after the 10-day period mentioned.

PUMP PERFORMANCE REQUIREMENTS

The pumps shall deliver the necessary pumping rates in liters per minute to effectively operate the temporary irrigation system.

PIPE, JOINTS AND FITTINGS

Pipe, joints and fittings shall conform to the provisions in Section 74-2.04, "Pipe, Joints and Fittings," of the Standard Specifications, except that the amount of the zinc coating for galvanized steel pipe shall be a minimum of 90 percent of that specified in the requirements in ASTM Designation: A 120, standard weight.

VALVE BOXES

Valve boxes shall conform to the provisions in Section 20-2.24, "Valve Boxes," of the Standard Specifications as modified by the provisions in "Valve Boxes" of these special provisions.

FOUNDATIONS

Concrete for foundations and pads shall be minor concrete and shall contain not less than 325 kg of portland cement per cubic meter.